



Approval #

970011-U (Replaces 910025-U)

Safety & Buildings Division
201 East Washington Avenue
P.O. Box 7969
Madison, WI 53707

Wisconsin Material Approval

Material

SOILTEST Ainlay Tank 'Tegrity Tester™ - Version S-3

Manufacturer

SOILTEST, Inc.
86 Albrecht Drive
Lake Bluff, Illinois 60044-8004

SCOPE OF EVALUATION

The SOILTEST Ainlay Tank 'Tegrity Tester™, Version S-3, manufactured by SOILTEST, Inc., has been evaluated for use as a tank tightness testing system complying with **section ILHR 10.61 (3)** of the current edition of the Wisconsin Flammable and Combustible Liquids Code.

DESCRIPTION AND USE

The SOILTEST Ainlay Tank 'Tegrity Tester™ is a volumetric tank tightness testing method that directly measures changes in product volume. The SOILTEST Ainlay tank test system may be used for tanks containing gasoline and diesel fuel. The test results are invalid for #4 and #6 fuel oils.

The SOILTEST Ainlay system is capable of detecting the presence of water in the bottom of the tank but does not measure the inflow of water. The level of groundwater is to be determined by an observation well near the tank or information from other sources such as the United States Geological

Survey. Interference due to high groundwater is corrected by raising the product level to produce a net positive pressure inside the tank.

Vapor pockets are identified by erratic readings or sudden large changes in readings. If present, vapor pockets must be bled off and the test must be started over. Tank deformation changes and stabilization are determined by watching data trends and beginning the test when decrease in the product level has stopped.

Leak rates are calculated using the data from the last 1 1/2 hours of the test period. The data must be determined to be valid by statistical analysis. The results are considered to be inconclusive if vapor pockets are present, there is too much variability in the data, or there is an unexplained increase in measured product volume. A threshold value of 0.05 gallon per hour is used to declare that a tank is leaking.

The total time required for a test with this method (including stabilization, equipment setup, data collection and equipment removals) is 14 hours. This is probably the minimum time the tank will be out of service.

TESTS AND RESULTS

The SOILTEST Ainlay Tank "Tegrity Tester™, Version S-3, was evaluated by Law Engineering Industrial Services in accordance with the United States Environmental Protection Agency protocol for volumetric tank testing methods. The system was found to be capable of detecting a leak of 0.05 gallon per hour with a probability of false alarm (P(FA)) of 1 percent. The probability of detection (P(D)) of a 0.10 gallon per hour leak was found to be 99 percent.

The EPA test procedure used by Law Engineering Services only addressed the issue of the methods ability to detect leaks and not for safety hazards.

LIMITATIONS OF APPROVAL

The SOILTEST Ainlay Tank "Tegrity Tester™ is approved for use on tanks containing gasoline or diesel fuel and tank sizes no larger than 15,000 gallons.

The procedure specified by SOILTEST shall be used to conduct all tests.

The difference between the temperature of added product and in-tank product shall be no greater than + or - 5°F.

The tank shall be filled to 100 percent full with product in the fill pipe during the test.

The waiting time between filling the tank (adding from 50 to 95 percent capacity) and the start of test data collection shall be at least 12 hours. The waiting time between "topping off" of the tank with 2 to 5 inches of product to the final test level and the start of data collection shall be at least 2 hours. The total time for data collection shall be at least 1 1/2 hours. The actual waiting times may be extended beyond the minimums, depending on the tank size, the amount and temperature of product added, and test operator discretion.

This approval will be valid through December 31, 2002, unless manufacturing modifications are made to the product or a re-examination is deemed necessary by the Department. The Wisconsin Building Material Approval Number must be provided when building plans that include this product are submitted for review.

DISCLAIMER

The Department is in no way endorsing or advertising this material. This approval addresses only the specified applications for the product and does not waive any code requirement not specified in this document.

Reviewed by: _____

Approval Date: _____ By: _____

Sam Rockweiler
Code Development Section
Program Development Bureau

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